

100

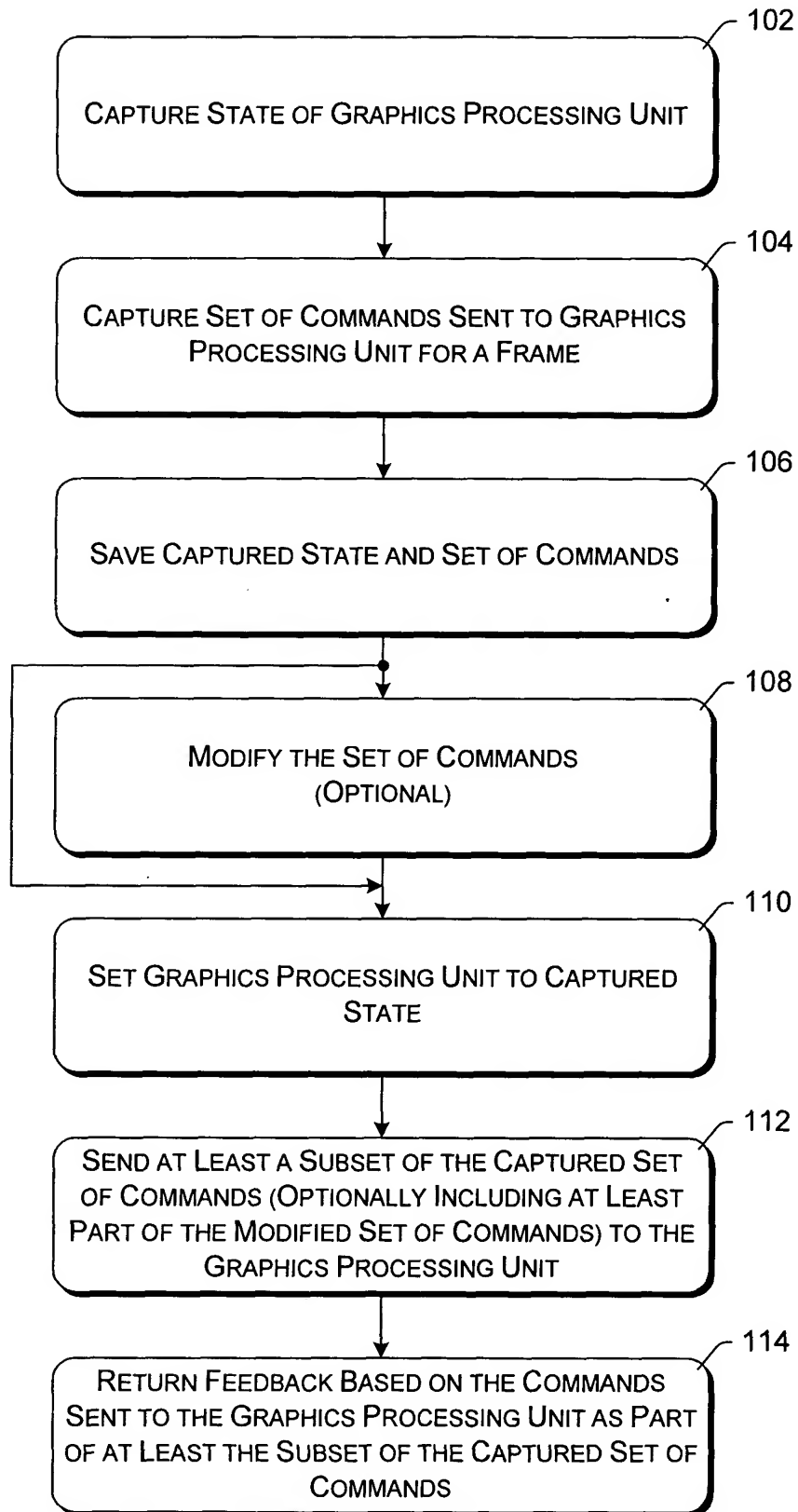


Fig. 1

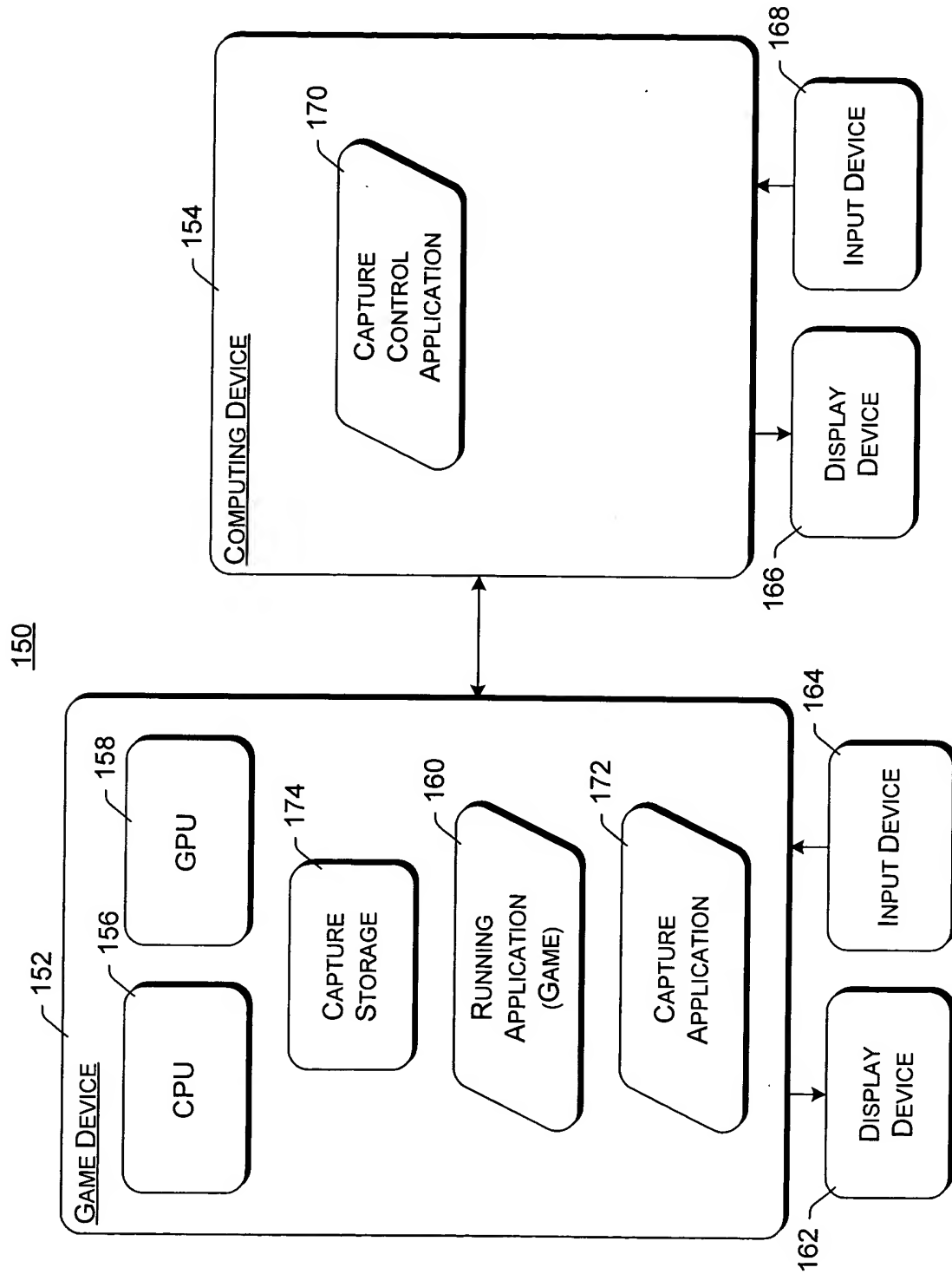


Fig. 2

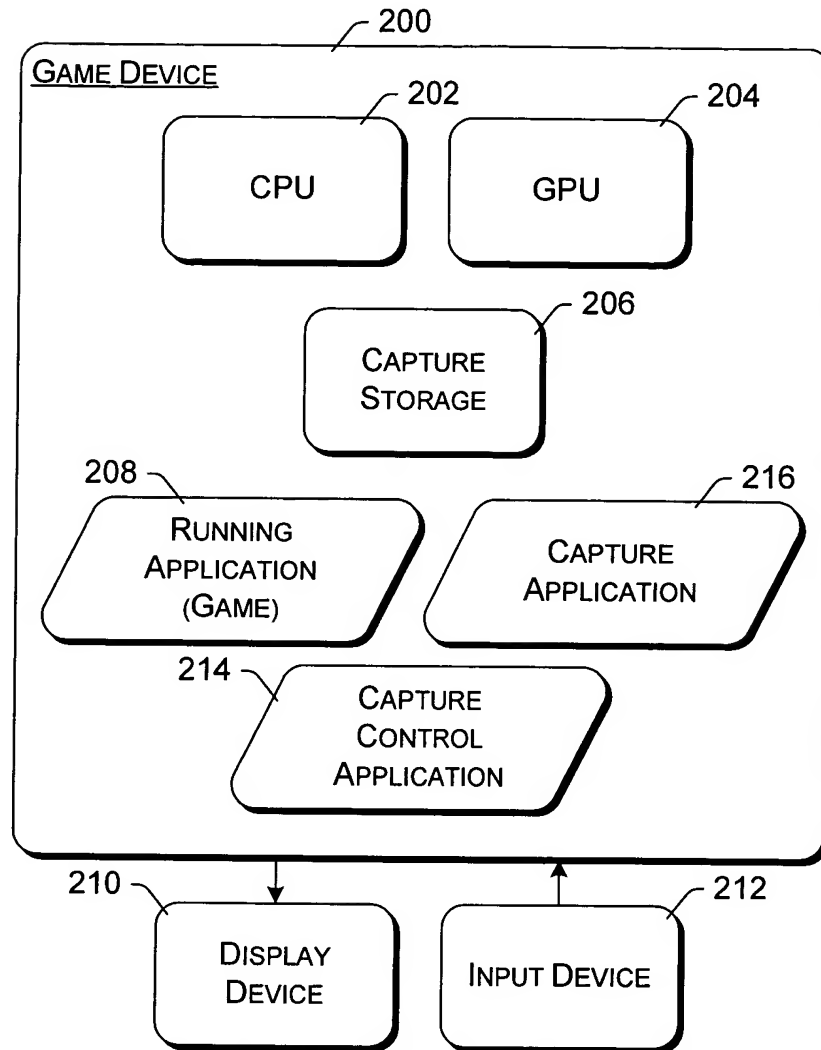


Fig. 3

240

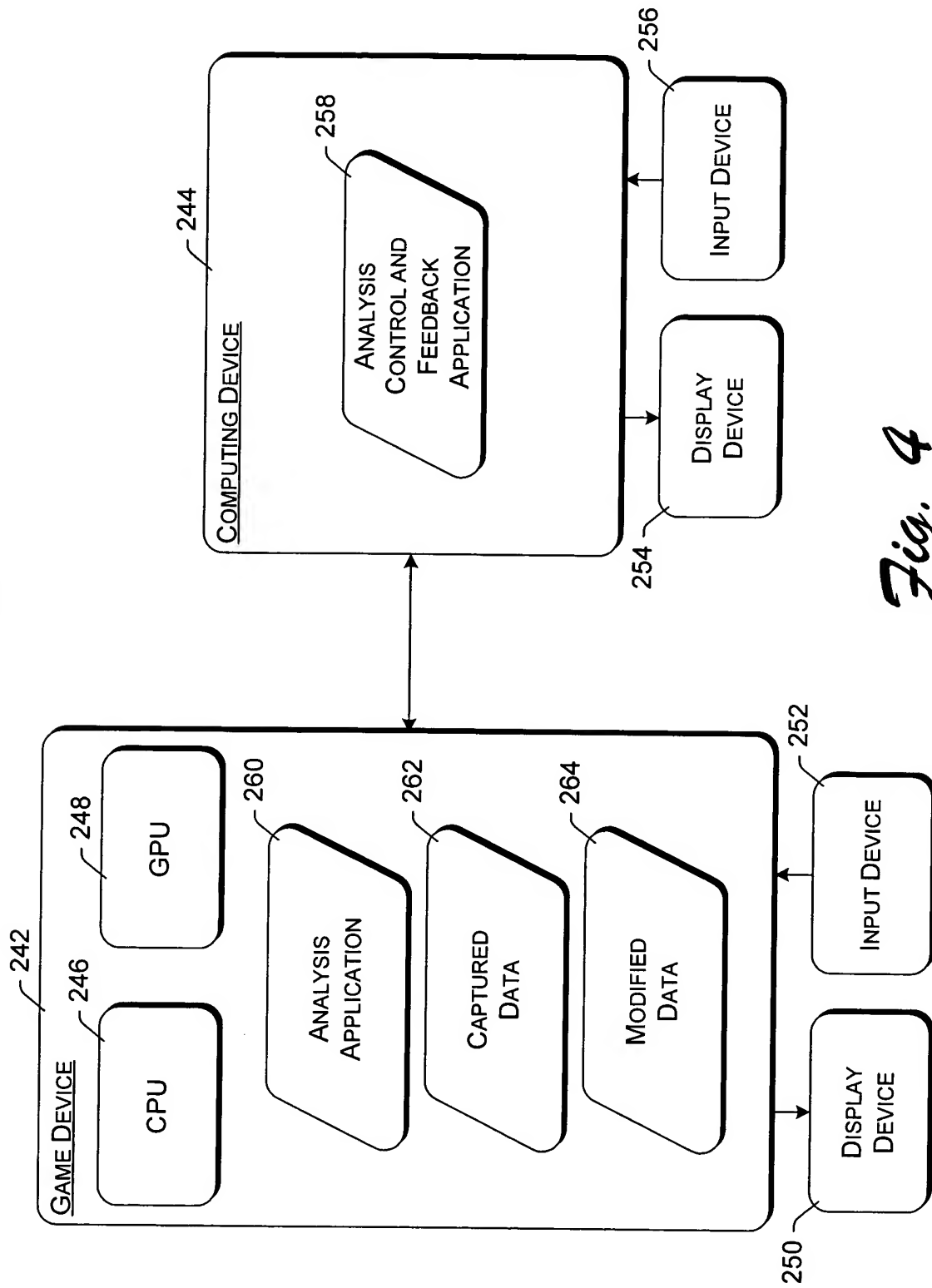


Fig. 4

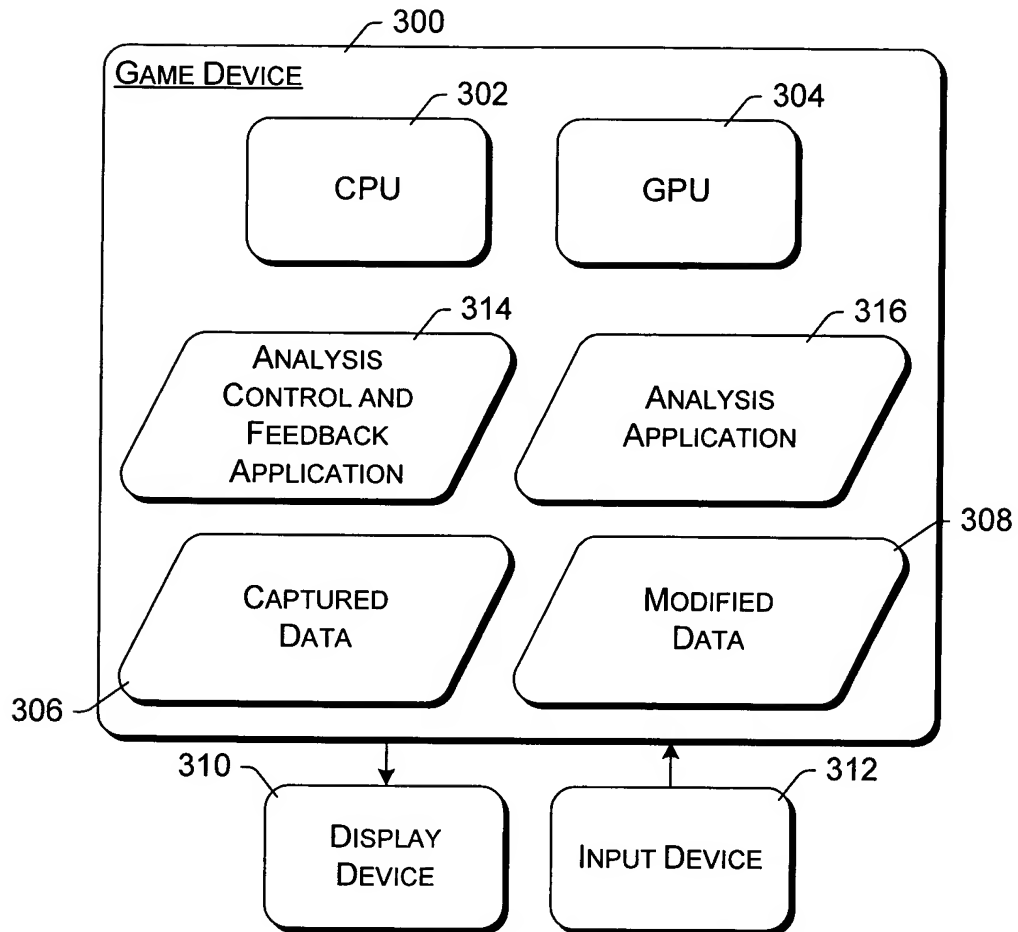


Fig. 5

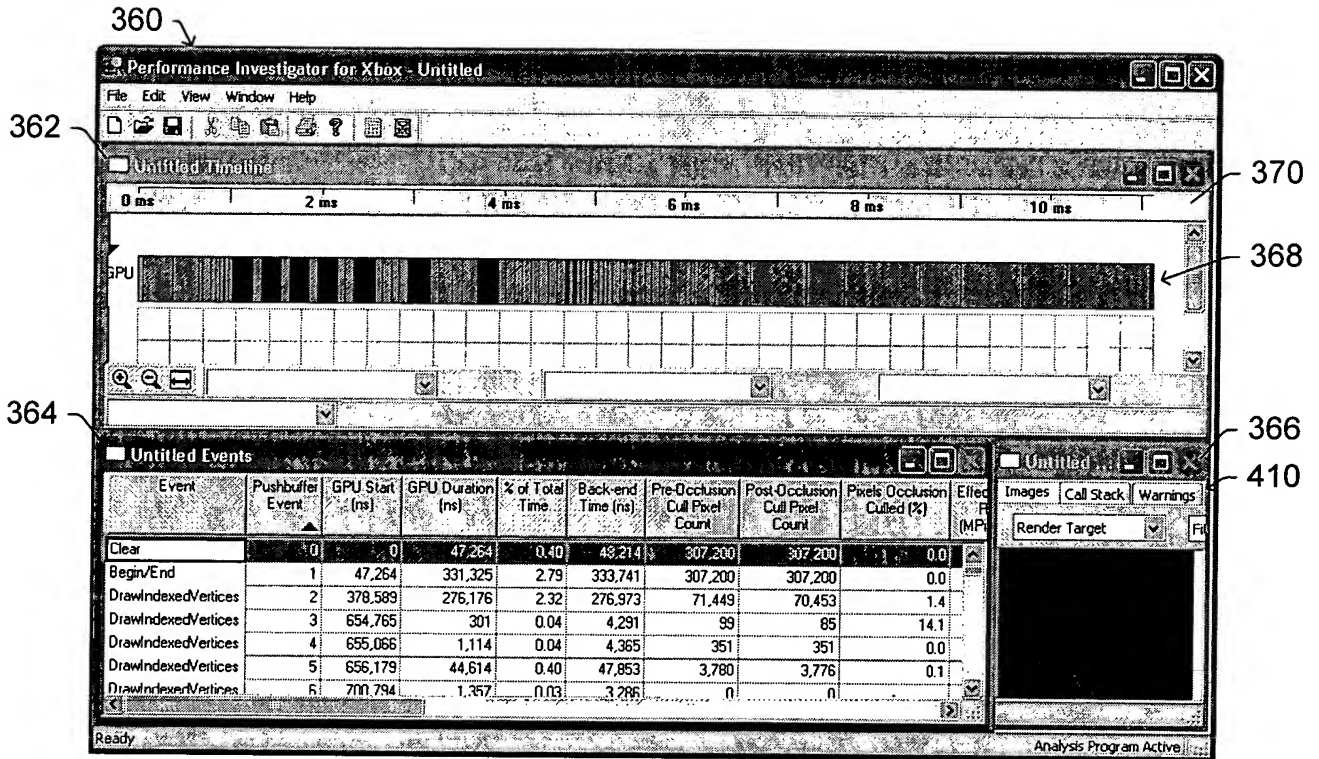


Fig. 7

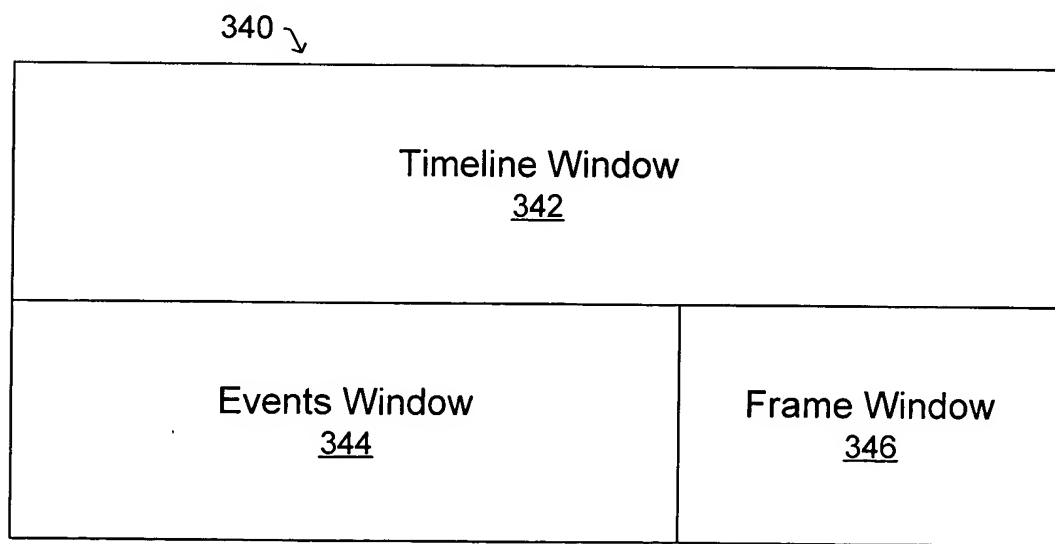


Fig. 6

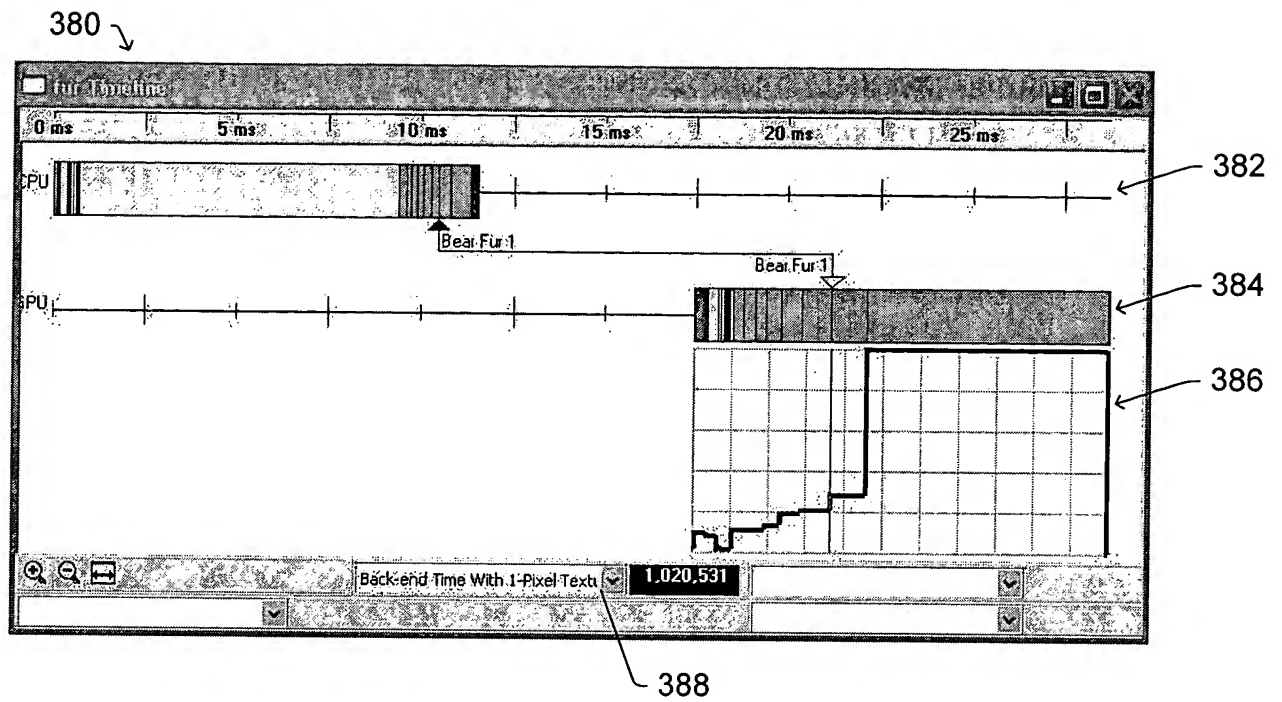


Fig. 8

400 ↘

Fur Events								
Event	ID	CPU Start (ns)	CPU Duration (ns)	GPU Start (ns)	GPU Duration (ns)	% of Total Time	Back-end Time (ns)	Setup Time (ns)
KickPushBuffer	0	0	14,449	-	-	-	-	-
FrameMove	1	36,612	101,750	-	0	-	-	-
Clear	3	144,537	4,698	15,745,863	48,640	-	-	-
Begin/End	4	181,781	29,929	15,794,503	331,584	-	-	-
Bear Mesh 0								
DrawIndexedVertices	6	252,563	125,782	16,126,087	278,176	-	-	-
KickPushBuffer	7	339,091	5,501	-	-	-	-	-
KickPushBuffer	8	374,790	3,385	-	-	-	-	-
DrawIndexedVertices	9	386,209	10,399	16,404,263	3,072	-	-	-
DrawIndexedVertices	10	401,332	6,393	16,407,335	2,656	-	-	-
Bear Mesh 1	11	409,555	56,960	16,409,991	45,568	-	-	-
Bear Mesh 2	15	466,773	39,522	16,455,559	74,208	-	-	-
Bear Mesh 3	19	506,536	91,996	16,529,767	59,072	-	-	-
Bear Mesh 4	25	598,778	53,437	16,588,839	47,232	-	-	-
Bear Mesh 5	29	652,769	39,348	16,636,071	47,552	-	-	-
Bear Mesh 6	33	692,356	37,207	16,683,623	45,248	-	-	-
Bear Mesh 7	37	729,799	92,051	16,728,871	50,783	-	-	-
Bear Fur 7								
DrawFins	44	852,610	122,595	16,779,656	156,932	-	-	-
DrawShells	73	975,455	40,536	16,936,616	61,407	-	-	-
Bear Fur 6	75	1,019,798	117,933	16,998,024	219,011	-	-	-
Bear Fur 5	107	1,138,001	7,341,552	17,217,064	224,739	-	-	-
Bear Fur 4	142	8,479,990	164,020	17,441,832	284,642	-	-	-

Fig. 9

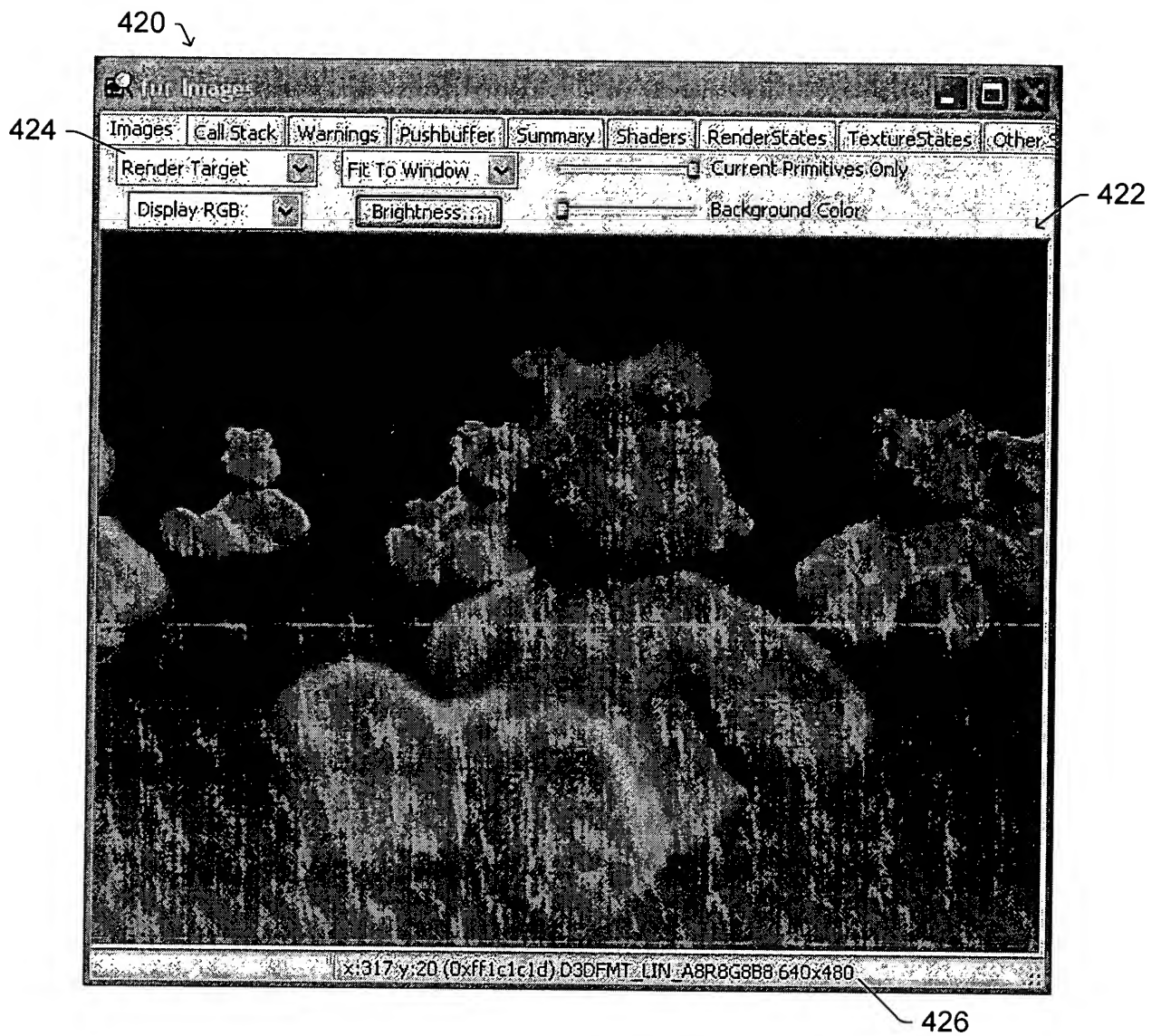


Fig. 10

420 ↘

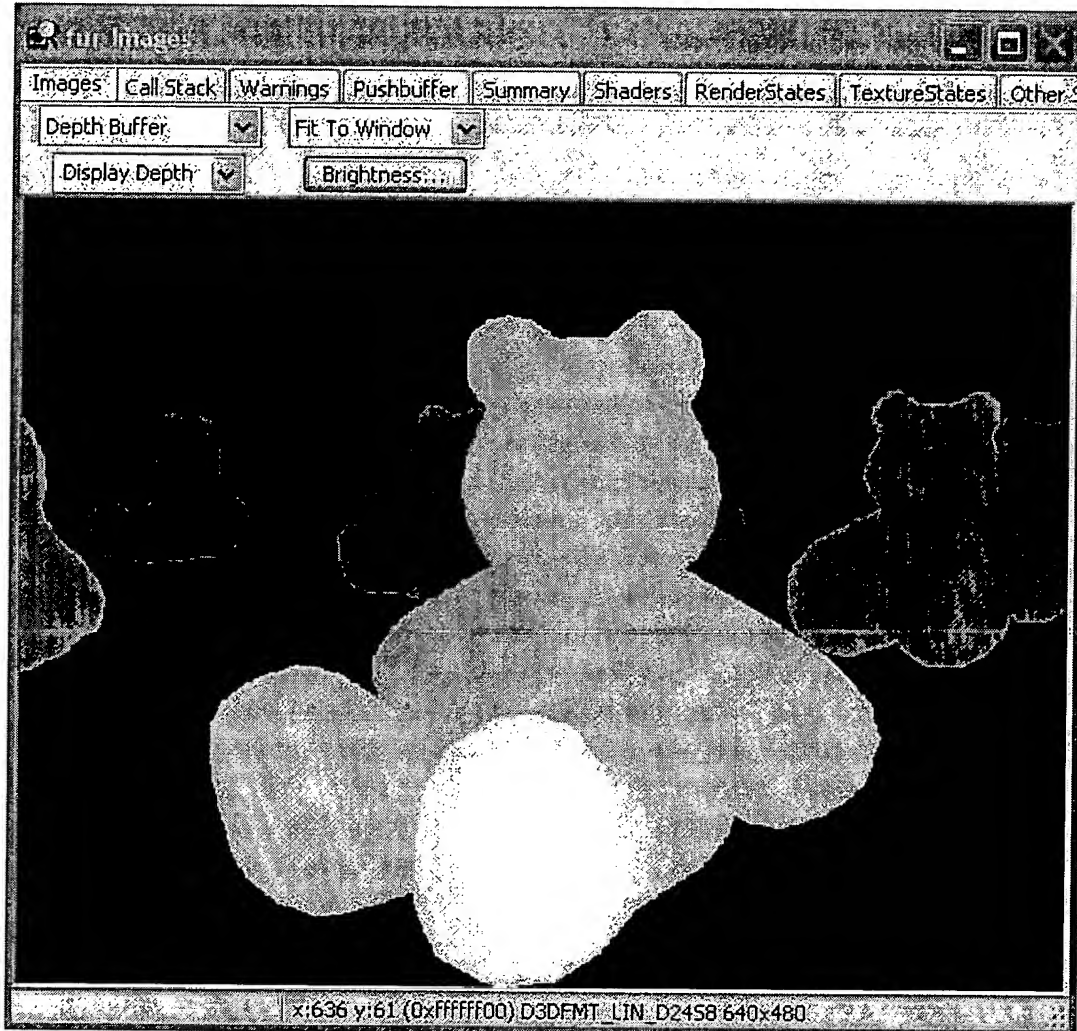


Fig. 11

420 ↘

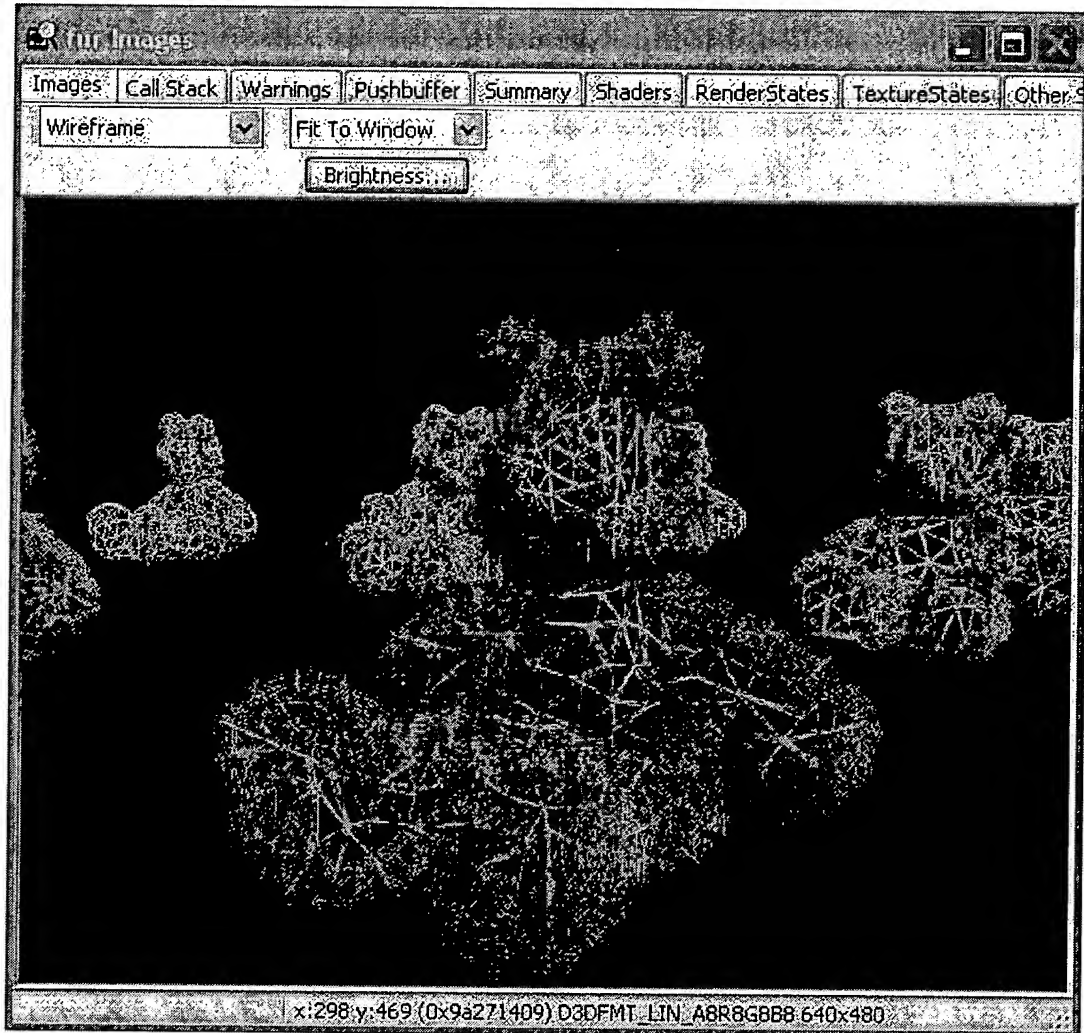


Fig. 12

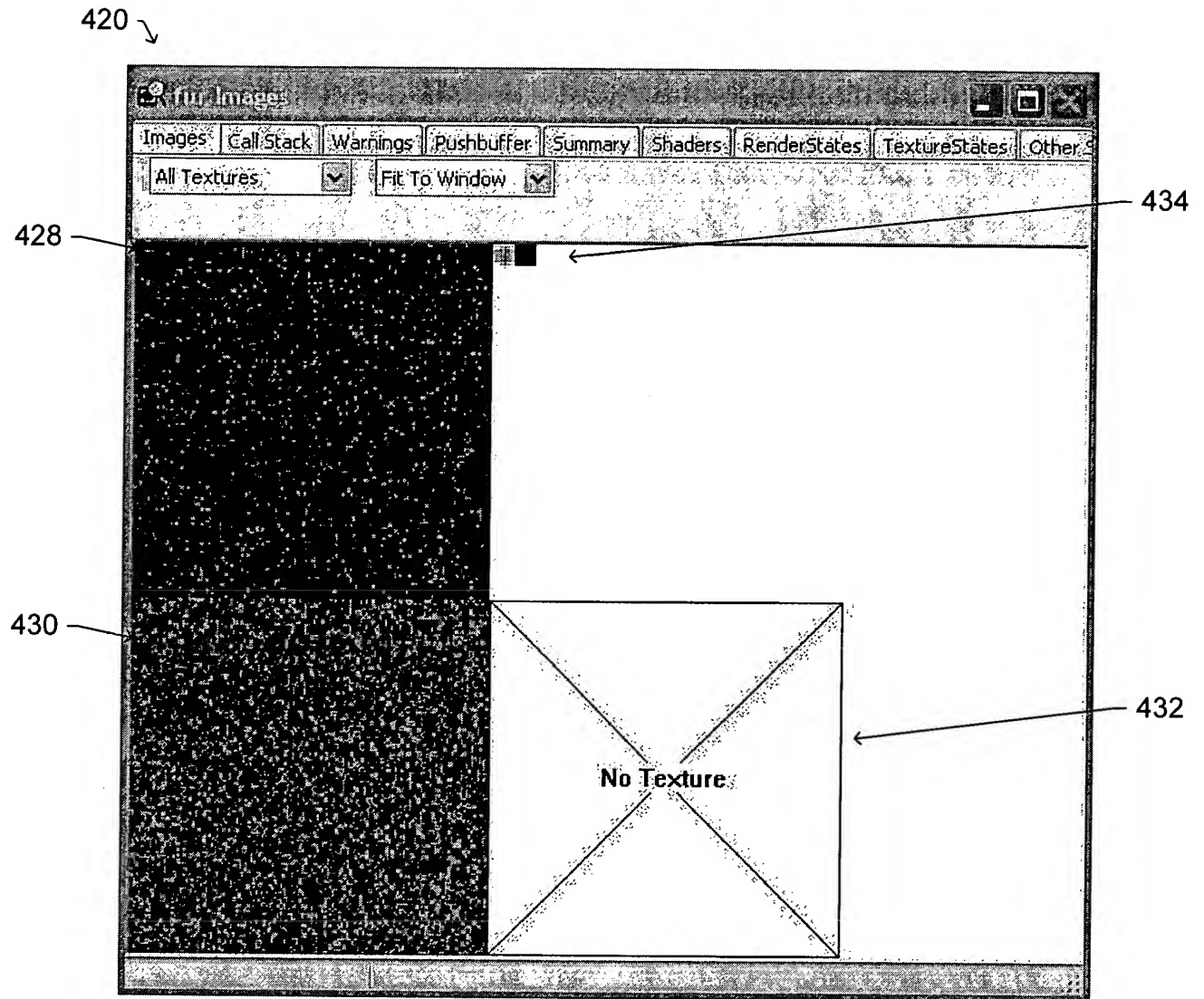


Fig. 13

420 ↘



Fig. 14

420 ↘

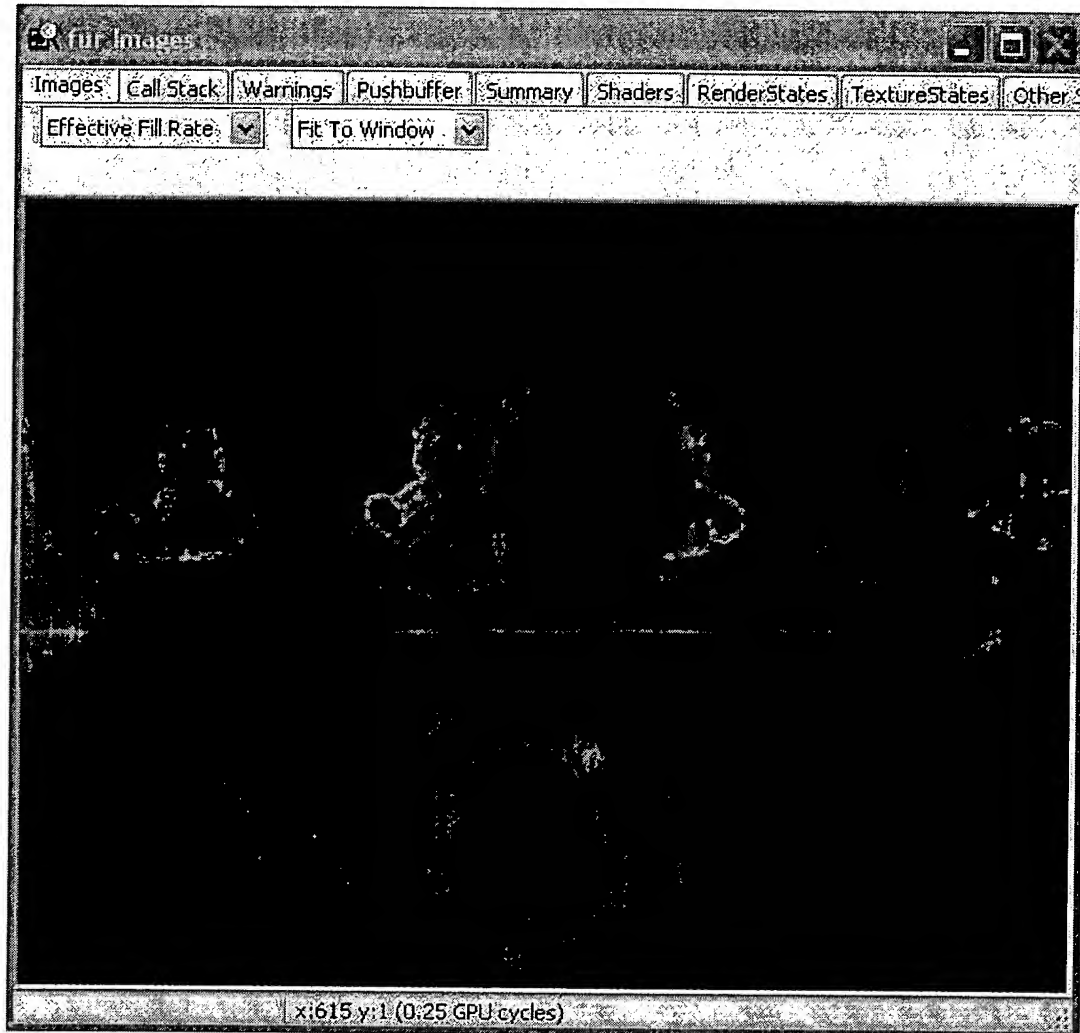


Fig. 15

450 ↘

452 ↗

Pushbuffer Stack Trace			
<div> <div>Images</div> <div>Call Stack</div> <div>Warnings</div> <div>Pushbuffer</div> <div>Summary</div> <div>Shaders</div> <div>RenderStates</div> <div>TextureStates</div> <div>Other State</div> </div>			
Path to Symbol File: c:\xboxbins\dump		<div> <div>Browse</div> <div>Resolve Symbols</div> </div>	
Event	Symbol	Line	File
BlockOnObject	D3D::BlockOnTime	537	c:\xbox\private\windows\directx\d3d8\se\pusher.cpp
	D3D::BlockOnNonSurfaceResource	1287	c:\xbox\private\windows\directx\d3d8\se\pusher.cpp
	D3DFixup_Reset	1857	c:\xbox\private\windows\directx\d3d8\se\pushres.cpp
	CXBoxSample::FrameMove	363	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	CXBoxApplication::Run	294	c:\xbox\private\atg\samples\common\src\xbapp.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
Clear	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c
	D3DDevice_Clear	74	c:\xbox\private\windows\directx\d3d8\se\clear.cpp
RunPushBuffer	CXBoxSample::Render	383	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c
DrawVerticesUP			
DrawVertices			
Begin/End	D3DDevice_Begin	1195	c:\xbox\private\windows\directx\d3d8\se\drawprim.cpp
	CXFont::Begin	448	c:\xbox\private\atg\samples\common\src\xbfont.cpp
	CXBoxSample::Render	387	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c

Fig. 16

460 ↗

↘ 462

ID	Event	Priority	Message
3	Clear	3	If all redundant state setting were perfectly eliminated, rendering of entire scene would be 0.
		2	The CPU's floating point precision is set to 53 bits. Consider calling _controlfp_PC_24, _MC
4	Begin/End	3	Vertex shader is writing to 9 output registers that are unused by the current pixel shader.
		3	To make best use of pixel pipelines and swathing, use a single clipped triangle that covers th
74	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
106	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
138	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
173	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
206	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
210	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
243	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
247	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
280	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
282	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
284	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
288	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
321	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
325	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
329	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
333	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
336	Begin/End	2	D3DPRESENT_INTERVAL_ONE_OR_IMMEDIATE and D3DPRESENT_INTERVAL_TW

Fig. 17

464 ↘

Pushbuffer Disassembly			
Images Call Stack Warnings Pushbuffer Summary Shaders Render States Texture States Other State			
Event	Pushbuffer	Size	Attributes
BlockOnObject			
Clear	Clear(D3DCLEAR_TARGET D3DCLEAR_ZBUFFER D3DCLEAR_STENCIL)	28	
RunPushBuffer			
DrawVerticesUP	D3DRS_PSCOMBINERCOUNT	8	Redundant
	D3DRS_PSRGBINPUTS*	36	Redundant
	D3DRS_PSRGBOUTPUTS*	36	Redundant
	D3DRS_PSALPHAINPUTS*	36	Redundant
	D3DRS_PSALPHAOUTPUTS*	36	Redundant
	LazySetShaderStageProgram	8	Redundant
	SetVertexShaderConstant	44	
	SetVertexShader/SelectVertexShader	208	
	LazySetSpecFogCombiner	8	Redundant
	D3DRS_PSFINALCOMBINERINPUTSABCD	8	
	D3DRS_PSFINALCOMBINERINPUTSEFG	4	
	LazySetState/SetVertexShaderInput	100	
	Jump	4	
	D3DRS_CULLMODE	8	
	D3DRS_ALPHABLENDENABLE	532	
	SetVertexShaderConstant	76	
	SetVertexShader/SelectVertexShader	136	
	CommonSetViewport	52	Redundant
	SetVertexShader/SelectVertexShader	8	Redundant
	D3DRS_PSCOMBINERCOUNT	8	
	D3DRS_PSRGBINPUTS*	36	
	D3DRS_PSRGBOUTPUTS*	36	
	D3DRS_PSALPHAINPUTS*	36	

Fig. 18

468 ↘

Summary	Value
Timing Data Summary	
Total CPU Time	11,437,802 ns
Total GPU Time	11,280,032 ns
Approximate Framerate	87.43 fps
Display Format	
D3DFMT_LIN_A8R8G8B8	640 x 480
State changes	
Textures	67
Vertex buffers	54
Palettes	0
Color buffers	1
Z buffers	0
Vertex shader programs	20
Vertex shader constants	145
Fences	13
KickOffs	24
Jumps	0
Vertex data types	
D3DVSDT_FLOAT2	101
D3DVSDT_FLOAT3	115
D3DVSDT_D3DCOLOR	1
Memory usage	3,768,320 bytes

Fig. 19

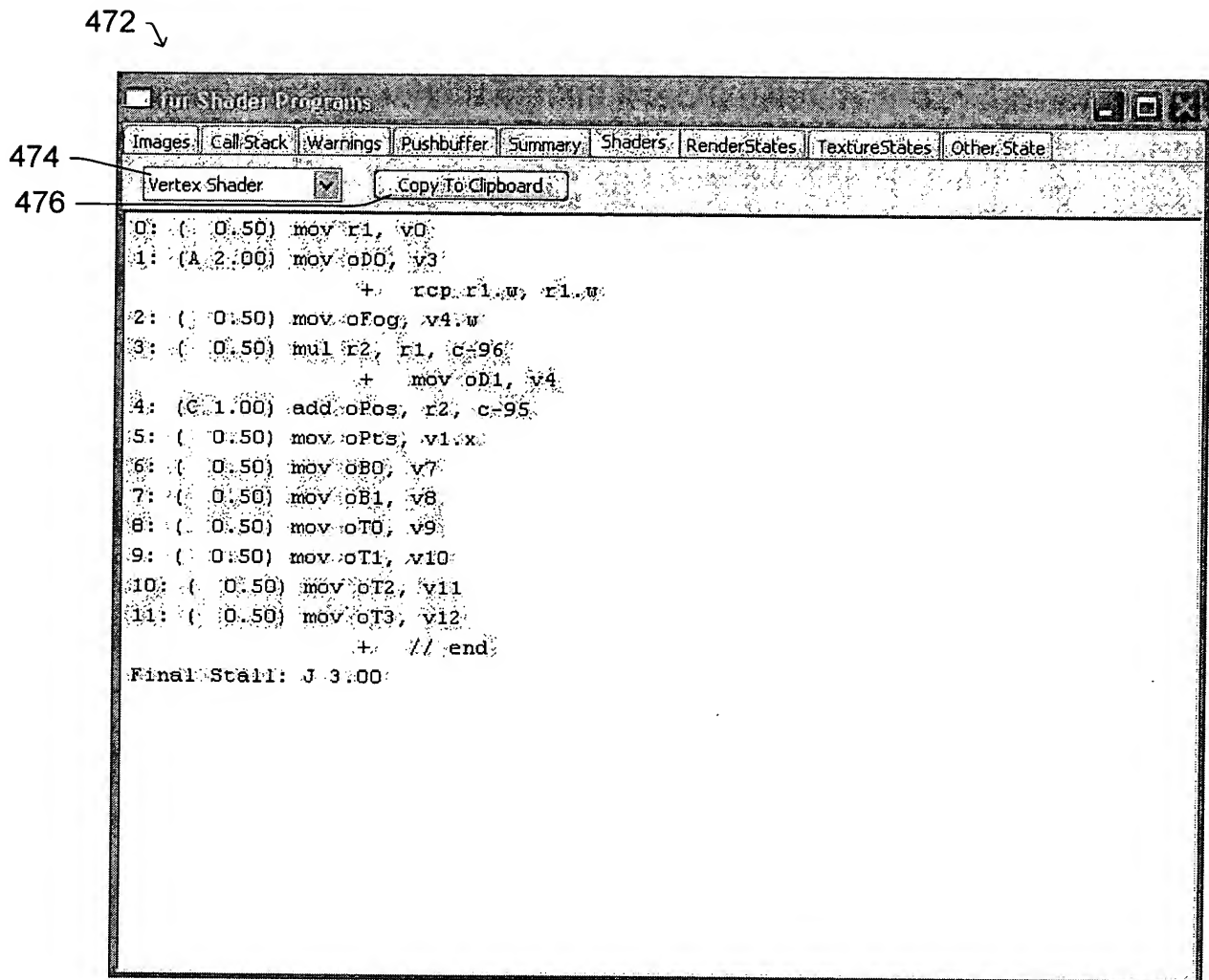
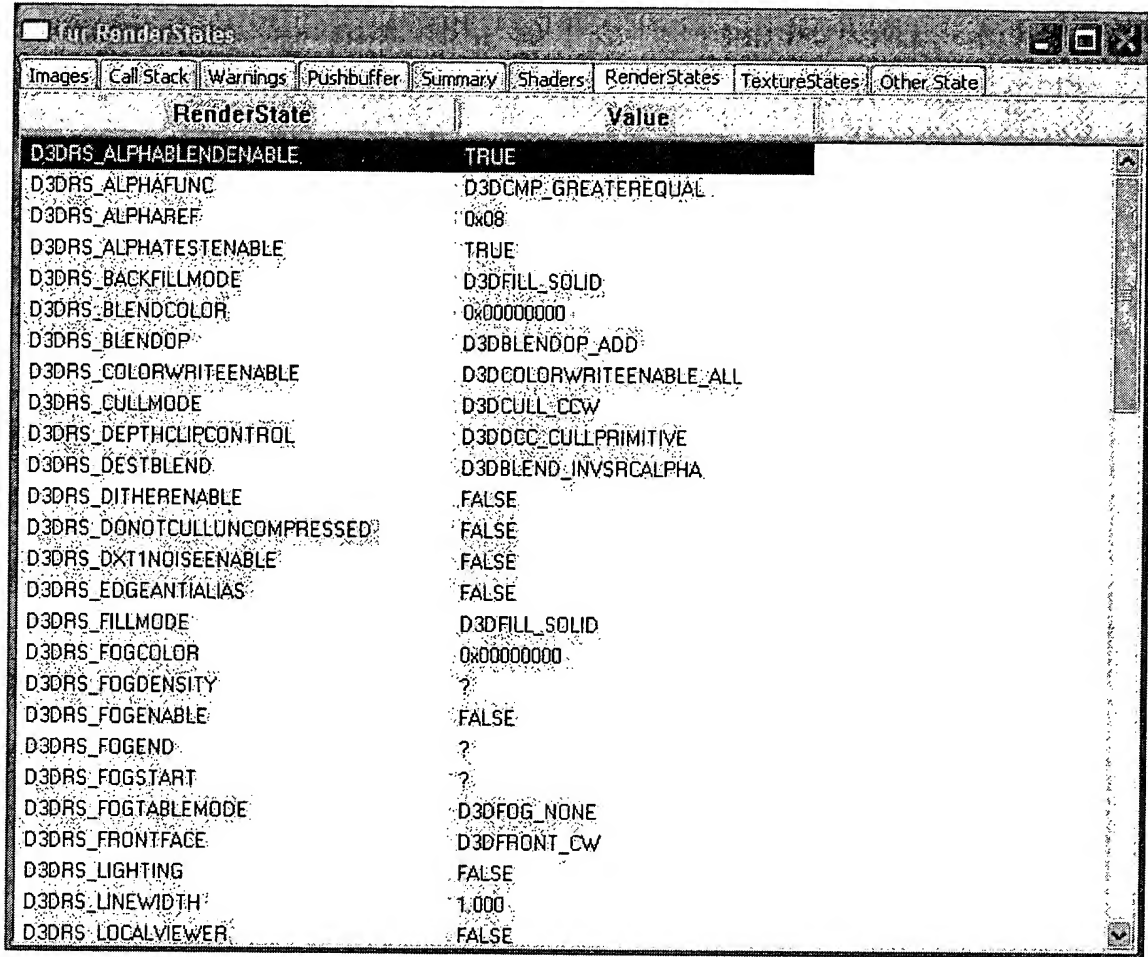


Fig. 20

480 ↘



The screenshot shows a window titled "RenderStates" with a tabbed interface. The "RenderStates" tab is selected. The window displays a list of render states and their corresponding values.

RenderState	Value
D3DRS_ALPHABLENDENABLE	TRUE
D3DRS_ALPHAFUNC	D3DCMP_GREATEREQUAL
D3DRS_ALPHAREF	0x08
D3DRS_ALPHATESTENABLE	TRUE
D3DRS_BACKFILLMODE	D3DFILL_SOLID
D3DRS_BLENDCOLOR	0x00000000
D3DRS_BLENDOP	D3DBLENDOP_ADD
D3DRS_COLORWRITEENABLE	D3DCOLORWRITEENABLE_ALL
D3DRS_CULLMODE	D3DCULL_CW
D3DRS_DEPTHCLIPCONTROL	D3DDCC_CULLPRIMITIVE
D3DRS_DESTBLEND	D3DBLEND_INVSRCALPHA
D3DRS_DITHERENABLE	FALSE
D3DRS_DONOTCULLUNCOMPRESSED	FALSE
D3DRS_DXT1NOISEENABLE	FALSE
D3DRS_EDGEANTIALIAS	FALSE
D3DRS_FILLMODE	D3DFILL_SOLID
D3DRS_FOGCOLOR	0x00000000
D3DRS_FOGDENSITY	?
D3DRS_FOGENABLE	FALSE
D3DRS_FOGEND	?
D3DRS_FOGSTART	?
D3DRS_FOGTABLEMODE	D3DFOG_NONE
D3DRS_FRONTFACE	D3DFRONT_CW
D3DRS_LIGHTING	FALSE
D3DRS_LINEWIDTH	1.000
D3DRS_LOCALVIEWER	FALSE

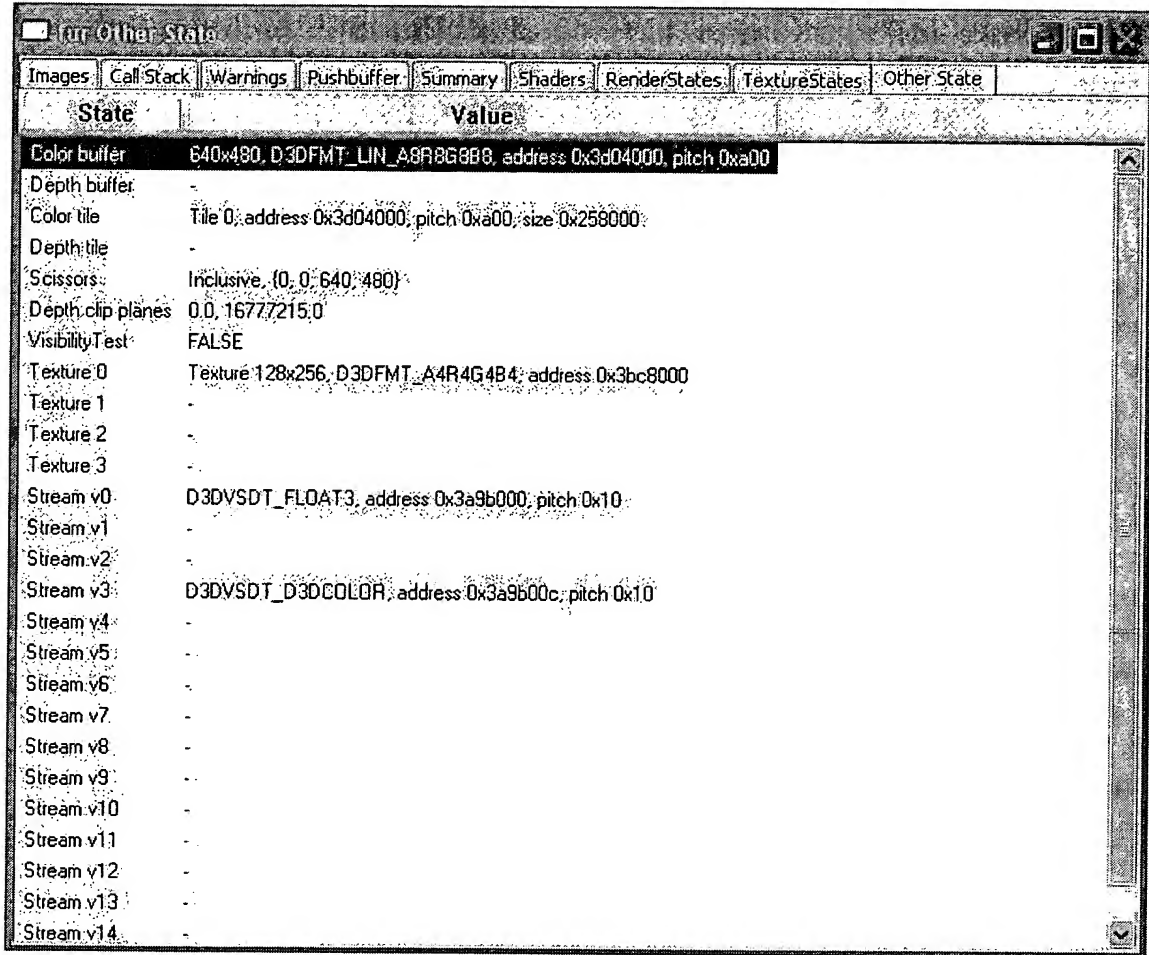
Fig. 21

484 ↘

Texture State		Value
Texture Unit 0		
D3DTSS_ADDRESSU		D3DADDRESS_WRAP
D3DTSS_ADDRESSV		D3DADDRESS_WRAP
D3DTSS_ADDRESSW		D3DADDRESS_WRAP
D3DTSS_ALPHAKILL		D3DTALPHAKILL_DISABLE
D3DTSS_BORDERCOLOR		0x00000000
D3DTSS_BUMPENVLOFFSET		-
D3DTSS_BUMPENVLSCALE		-
D3DTSS_BUMPENVMAT00		-
D3DTSS_BUMPENVMAT01		-
D3DTSS_BUMPENVMAT10		-
D3DTSS_BUMPENVMAT11		-
D3DTSS_COLORKEY		0x00000000
D3DTSS_COLORKEYOP		D3DTCOLORKEYOP_DISABLE
D3DTSS_COLORSIGN		0
D3DTSS_MAGFILTER		D3DTEXF_LINEAR
D3DTSS_MAXANISOTROPY		0
D3DTSS_MAXMIPLEVEL		0
D3DTSS_MINFILTER		D3DTEXF_LINEAR
D3DTSS_MIPFILTER		D3DTEXF_LINEAR
D3DTSS_MIPMAPLODBIAS		0.000
D3DTSS_TEXCOORDINDEX		?
D3DTSS_TEXTURETRANSFORMFLAGS		?
Texture Unit 1		
D3DTSS_ADDRESSU		D3DADDRESS_WRAP

Fig. 22

488 ↘



The screenshot shows a window titled "Other State" with a tabbed interface. The "Other State" tab is selected. The window contains a table with two columns: "State" and "Value". The table lists various rendering state variables and their current values.

State	Value
Color buffer	640x480, D3DFMT_LIN_A8R8G8B8, address 0x3d04000, pitch 0xa00
Depth buffer	-
Color tile	Tile 0, address 0x3d04000, pitch 0xa00, size 0x258000
Depth tile	-
Scissors	Inclusive {0, 0, 640, 480}
Depth clip planes	0.0, 16777215.0
VisibilityTest	FALSE
Texture 0	Texture 128x256, D3DFMT_A4R4G4B4, address 0x3bc8000
Texture 1	-
Texture 2	-
Texture 3	-
Stream v0	D3DVSDT_FLOAT3, address 0x3a9b000, pitch 0x10
Stream v1	-
Stream v2	-
Stream v3	D3DVSDT_D3DCOLOR, address 0x3a9b00c, pitch 0x10
Stream v4	-
Stream v5	-
Stream v6	-
Stream v7	-
Stream v8	-
Stream v9	-
Stream v10	-
Stream v11	-
Stream v12	-
Stream v13	-
Stream v14	-

Fig. 23

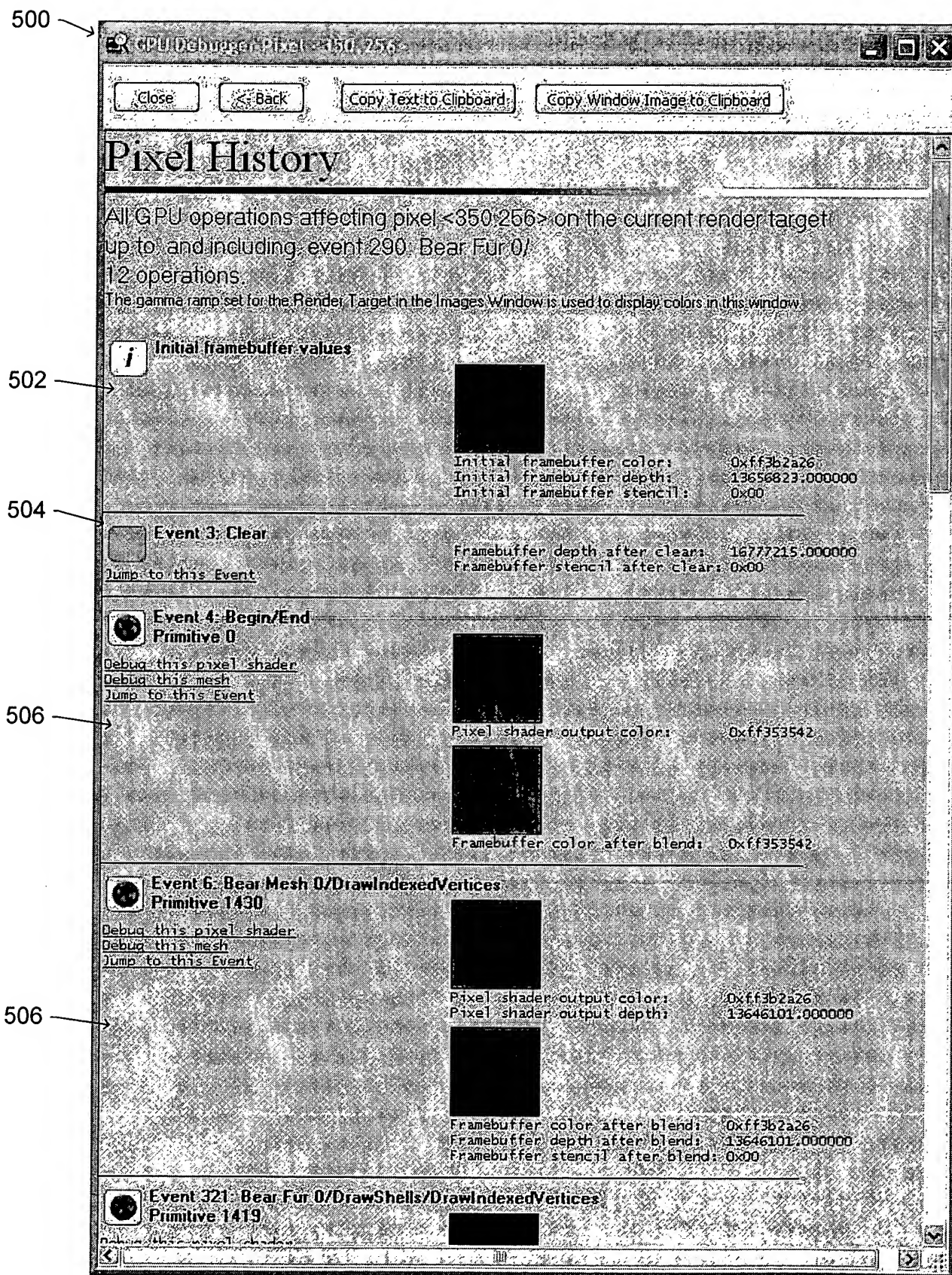
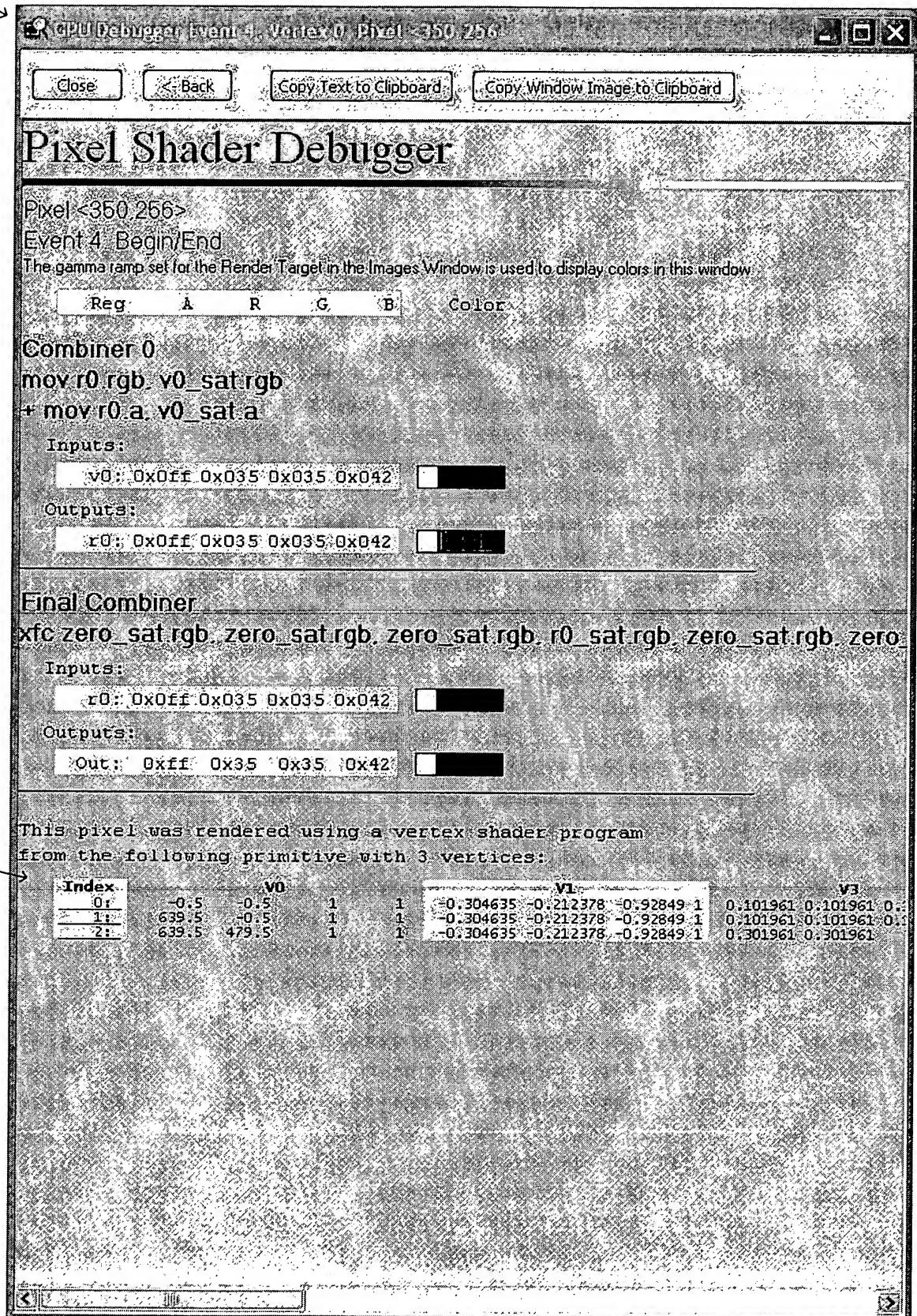


Fig. 24

520 →



522 →

Fig. 25

540 ↘

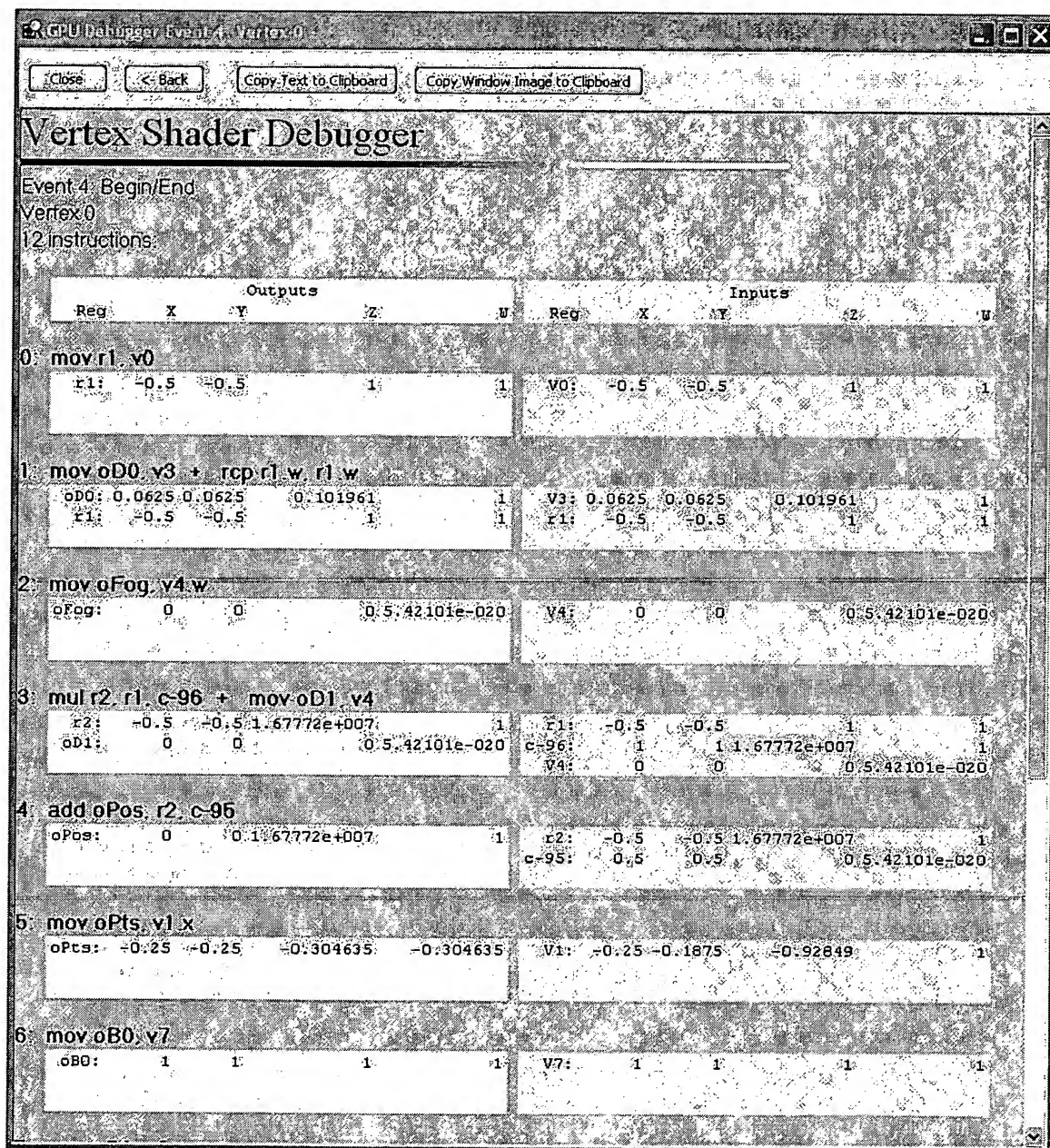


Fig. 26

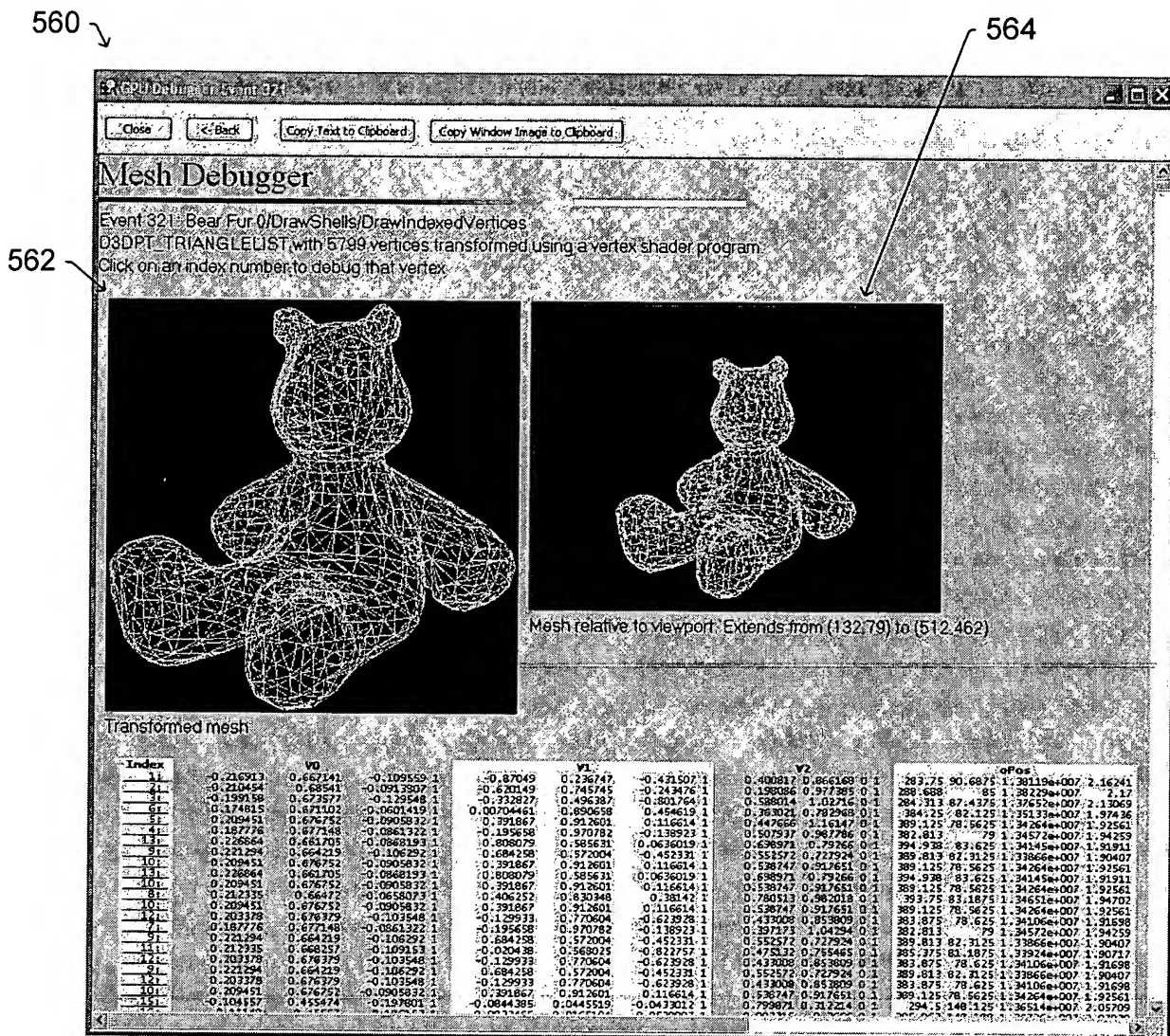


Fig. 27

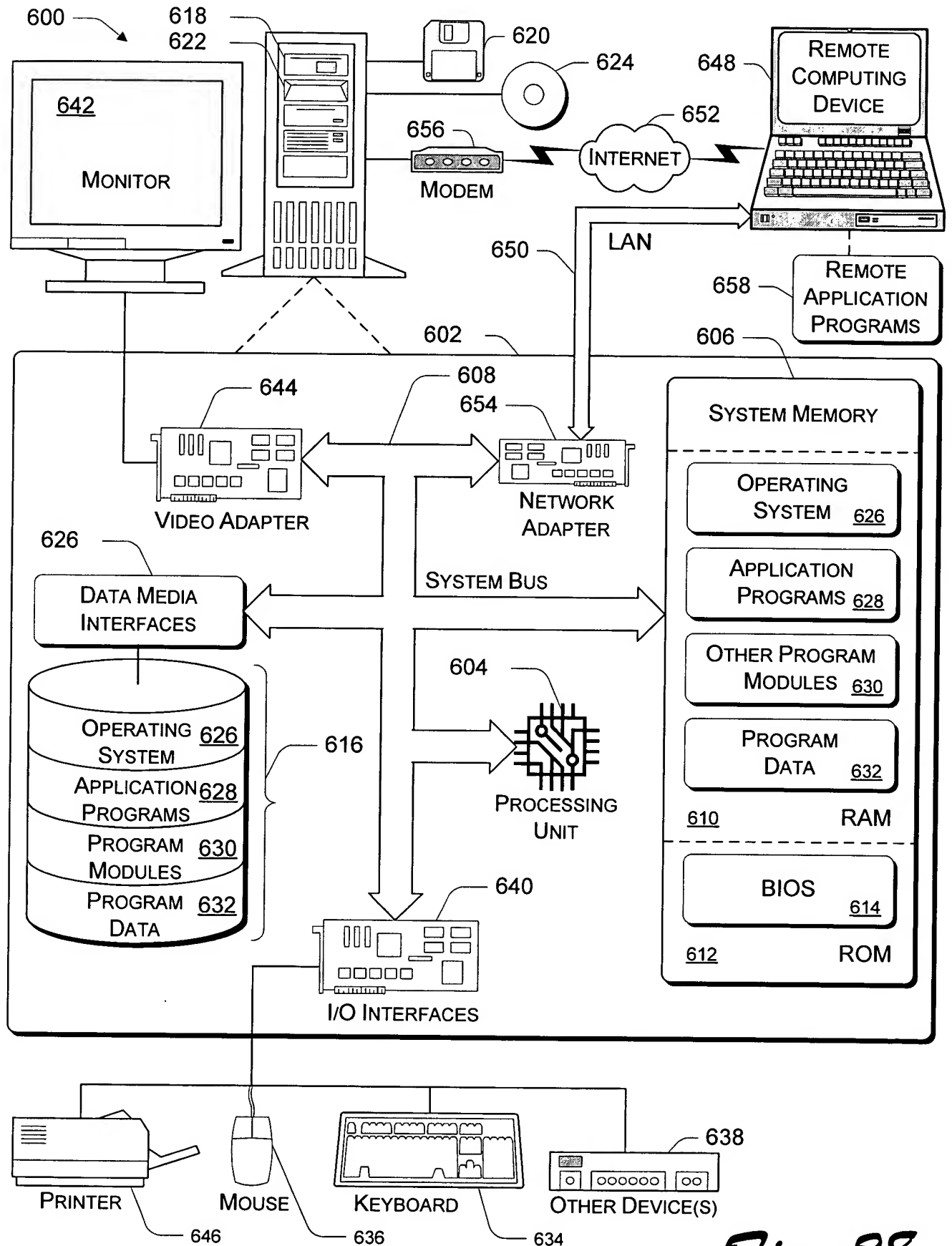


Fig. 28